Va. The ball entered a little below the anterior superior spinous process of the illium, and made its exit near the outer margin of the sacrum. The ball passed deeply, and fractured in its course the rim of the acetabulum, which was removed an inch and a half in length and of a diameter sufficient to show that the whole upper rim had been carried away. The wound was very large, and a thorough examination could be made by the easy passage of the finger. After a stay in military hospital of eight days, he was placed on board ship, and taken to his home, Buffalo, N. Y. On his arrival the wound presented a healthy appearance, and the constitutional disturbance was slight, considering the nature of the injury. The leg was partly flexed upon the thigh, and the thigh upon the body, the whole drawn internally to considerable extent. In this position it was fixed; it could not be moved in the slightest degree without producing pain, which was absolutely unendurable. The constitutional disturbance at length became very great, and the question of life rather than position of the leg engrossed all attention. Fragments of clothing and spiculæ of bone were at various times extracted or washed from the wound, while great quantities of pus constantly issued. Chills, profuse perspiration, rapid pulse, great prostration, with total loss of appetite, make up the main features of the case, the severe and continual pain overshadowing and covering all other symptoms—pain which it was impossible to allay. In this condition of extreme distress and uncertainty of life he continued without great change for about eight or ten weeks, when he gradually and very slowly commenced to improve, both in his general condition and in the appearance of the wound, until after a few weeks more he could be moved from one side of the bed to the other, and his comfort promoted by change of position. Abscesses afterwards occasionally formed for the next two years inducing great constitutional disturbance. For the last two years the patient has enjoyed comfortable health.

At present "the thigh is shortened three and a half inches; the head of the femur rests upon the illium above the acetabulum, and a complete and bony anchylosis exists; the knee is drawn inwards and the joint has good motion. The weight of the body can be borne upon that leg with comfort, and the twisting of the pelvis and the extension of the toes compensate for the shortening and stiffening in a wonderful degree, so that he walks with, or without a cane, with but slight disability, considering the severity of the injury and the unnatural condition of the articulation."

New Liquid for Producing Local Anæsthesia.—Prof. HENRY J. BIGELOW recommends (*Boston Med. and Surg. Journ.*, April 19, 1866) a petroleum naphtha, one of the most volatile liquids obtained by the distillation of petroleum, to which he gives the name of *Rhigolene*, as superior to ether for producing local anæsthesia. When Prof. B. learned, he says, that Dr. Richardson, of London, has succeeded in producing local anæsthesia by ether vapour, it occurred to him "that a very volatile product of petroleum might be more sure to congeal the tissuses, besides being far less expensive, than ether. Mr. Merrill having, at my request, manufactured a liquid of which the boiling point was 70° F., it proved that the mercury was easily depressed by this agent to 19° below zero, and that the skin could be with certainty frozen hard in five or ten seconds. A lower temperature might doubtless be produced, were it not for the ice which surrounds the bulb of the thermometer. This result may be approximately effected by the common and familiar "spray producer," the concentric tubes of Dr. Richardson not being absolutely necessary to congeal the tissues with the rhigolene, as in his experiments with common ether. I have for convenience used a glass phial, through the cork of which passes a metal tube for the fluid, the air-tube being outside, and bent at its extremity so as to meet the fluid-tube at right angles, at some distance from the neck of the bottle. Air is not admitted to the bottle, as in Mr. Richardson's apparatus, the vapour of the rhigolene generated by the warmth of the hand applied externally being sufficient to prevent a vacuum and to insure its free delivery; 15° below zero is easily produced by this apparatus. The bottle, when not in use, should be kept tightly corked, a precaution by no means superfluous, as the liquid readily loses its more volatile parts by evaporation, leaving a denser and consequently less efficient residue. In this, and in several more expensive forms of apparatus in metal, both with and without the concentric tubes, I have found the sizes of 72 and 78 of Stub's steel wire gauge to work well for the air and fluid orifices respectively; and it may be added that metal points reduced to sharp edges are preferable to glass, which, by its non-conducting properties, allows the orifices to become obstructed by frozen aqueous vapour.

"Freezing by rhigolene is far more sure than by ether, as suggested by Mr. Richardson, inasmuch as common ether, boiling only at about 96° instead of 70°, often fails to produce an adequate degree of cold. The rhigolene is more convenient and more easily controlled than the freezing mixtures hitherto employed. Being quick in its action, inexpensive, and comparatively odourless, it will supersede general or local anæsthesia by ether or chloroform for small operations and in private houses. The opening of felons and other abscesses, the removal of small tumours, small incisions, excisions, and evulsions, and perhaps the extraction of teeth, may be thus effected with admirable ease and certainty; and for these purposes surgeons will use it, as also, perhaps, for the relief of neuralgia, chronic rheumatism, &c., and as a styptic, and for the destruction by freezing of erectile and other growths. But for large operations it is obviously less convenient than general anæsthesia, and will never supersede it. Applied to the skin, a first degree of congelation is evanescent; if protracted longer, it is followed by redness and desquamation, which may be possiably averted by the local bleeding of an incision; but if continued or used on a large scale, the dangers of frost-bite and mortification must be imminent."

Dr. CALVIN G. PAGE, in a subsequent number of the same journal (May 24, 1866), confirms the statement of Prof. B.

"It is well known," he says, "that the temperature of the ordinary freezing mixture of ice and salt is from 0° to —2°. This temperature has been found sufficient for freezing living tissue and destroying local sensibility, but this mixture requires time for preparation, is sometimes difficult to apply, and is not available in the mouth. Ether (easily reduced to —4°), when vaporized in the mouth, produces irritation and disagreeable disturbance of the mucous membrane. Rhigolene has no such objection; when applied in the mouth it causes no irritation, nor does it produce any of the signs of general anæsthesia, the time taken in applying it being only from five to ten seconds. I have used it successfully in nine cases at the Central Office of the Boston Dispensary on teeth. The gum outside and inside should be slightly frozen, and should the crown of the tooth be found broken, it can be applied directly upon the carious part of the tooth, which may then be extracted without any outcry from the patient. I have also used it in various minor operations at the Dispensary, for Dr. S. L. Sprague, as extracting a fish-hook from the finger, extracting a needle from the hand, opening an abscess on the shoulder, a felon, &c.; and also at my own office for the first time on Sunday, April 15th, for opening a felon, and since then twice for felon and once for abscess, with perfect success.

"The result of all my experiments and trials seems to prove that rhigolene is a perfectly successful local anæsthetic, and in the mouth is superior to anything yet used; that ether will do the work on the external surface of the body without difficulty, as it can be brought below the temperature of the ordinary freezing mixture, but requires more time; that the Richardson instrument has no powers not equalled or surpassed by my modification of the Bergsen tubes. It is probable that the ordinary Bergsen tubes, made of smaller tubing and with finer points, will be finally used for local anæsthesia, with such modifications of form as will render them applicable to the mouth and the vagina. The excess of fluid in the tube is best prevented by placing a bit of sponge or wicking in the open end of the fluid-bearing arm of the tube.

"Instruments with stopcocks or cylinders requiring lubrication are not available with rhigolene, which takes up all oily matter in solution and causes leakage—for example, Luer's atomizer. Glass tubes will not answer, glass being a non-conductor.

"Dr. Bigelow, in his article on Rhigolene, gives a temperature of —19° as easily produced, but does not give the time necessary to produce it. I doubt if such a low temperature can be produced on a standard thermometer in sixty seconds, the time allowed in most of my experiments, by any instrument yet devised, though it can be if sufficient time is taken. The only objections to rhigolene are that it must be kept very cool, and cannot be conveniently carried about in warm weather or in the evening, as it boils at 70°, and is inflammable."

Active Principle of Rhus Toxicodendron.—Mr. John P. Maisch, one of our most skilful pharmaceutists, has published (*American Journal of Pharmacy*, January, 1866) his analysis of the Rhus Toxicodendron, which shows that it contains a new organic acid, for which he proposes the name of *Toxicodendric acid.* "That it is the principle," he states, "to which the poison oak owes its effects on the human system, was proved to my entire satisfaction by the copious eruption and the formation of numerous vesicles on the back of my hand, on the fingers, wrists, and bare arms, while I was distilling and operating with it. Several persons coming into the room while I was engaged with it, were more or less poisoned by the vapours diffused in the room; and I even transferred the poisonous effects to some other persons, merely by shaking hands with them.

"The dilute acid, as obtained by me, and stronger solutions of its salts, were applied to several persons, and eruptions were produced in several instances, probably by the former, though not always, which was most likely owing to the dilute state of the acid. Whenever this was boiled, I always felt the same itching sensation in the face, and on the bare arms, which I experience on continual exposure of my hands to the juice of the plant.

"As remedies against it, I have tried subacetate of lead, permanganate of potassa and ammonia, the last, I believe, with the best success. Alkaline solutions were first recommended by Prof. Procter, I believe, and, as my experiments show, they are the remedies which, *à priori*, might be expected to afford the greatest relief, just as in the case of formic acid. The eruption produced by this acid is very similar in its nature to the one produced by toxicodendric acid, and its effects yield readily to alkaline lotions. It is not unlikely that, like the formiates, the toxicodendrates are without any ill effects, if applied externally. The reactions of our new acid show, likewise, the reason why permanganate of potassa, subacetate and even acetate of lead may be valuable remedies for this eruption. While the former completely decomposes it, the last named salts produce nearly insoluble precipitates with it; at least, toxicodendric appears to be stronger in its affinities than acetic acid."

Sanitary Condition of the City of New Orleans during Federal Military Occupation.—The *Southern Journal of Medical Sciences* for May, 1866, has an interesting paper on this subject by one of the editors, Dr. E. D. Fenner, whose death our profession has recently had to deplore. This article teaches some sanitary lessons of the utmost importance. Dr. F. testifies from personal observation to the extraordinary efforts made by the military authorities to improve the sanitary condition of the city and to the success of those efforts. "Such efforts," he observes, "were never made before, although so often urged by the medical profession in previous years. But, perhaps, it may be said *such motives* were never presented before. Be that as it may, in spite of all the sufferings and sorrows incident to the war, we may still be thankful that this great sanitary experiment has been made. The city may be said to have been cleansed, and kept clean; at least when contrasted with anything of the kind ever seen here before. It was a herculean task, and, in our humble opinion, nothing short of military despotism would have accomplished it. The good work is not yet completed, but its salutary effects so far have been palpable, and ought to encourage us to carry it on to perfection. We have long entertained the opinion that if approved sanitary measures were as rigidly enforced in New Orleans as they are in London, Paris, and other European cities, it would perhaps rival any of them in salubrity. There is nothing in the climate or locality that renders the preservation of health and the attainment of longevity here impossible."

"But it may be contended," he adds, "that New Orleans is more indebted to quarantine than to local sanitary police for its escape from epidemic pestilence during its late military occupation. I cannot think so. Quarantine was supposed to be enforced with all possible rigor, being demanded by the same powerful motives